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(FILE 'HOME' ENTERED AT 13:03:35 ON 09 JAN 2004)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DISSABS, DDFB, DDFU, DGENE, DRUGB, DRUGMONOG2, ...' ENTERED AT 13:03:47 ON 09 JAN 2004

SEA (RGS OR REGULAT? OR G PROTEIN)

7930	FILE ADISCTI
1431	FILE ADISINSIGHT
1415	FILE ADISNEWS
77424	FILE AGRICOLA
1574	FILE ANABSTR
38038	FILE AQUASCI
161448	FILE BIOBUSINESS
5458	FILE BIOCOMMERCE
746900	FILE BIOSIS
25152	FILE BIOTECHABS
25152	FILE BIOTECHDS
280891	FILE BIOTECHNO
210504	FILE CABA
178811	FILE CANCERLIT
835197	FILE CAPLUS
8735	FILE CEABA-VTB
3906	FILE CEN
38852	FILE CIN
24629	FILE CONFSCI
9456	FILE CROPB
45538	FILE CROPU
66043	FILE DISSABS
6307	FILE DDFB
26872	FILE DDFU
435270	FILE DGENE
6307	FILE DRUGB
21	FILE DRUGMONOG2
1906	FILE IMSDRUGNEWS
33839	FILE DRUGU
1120	FILE IMSRESEARCH
9306	FILE EMBAL
558526	FILE EMBASE
329712	FILE ESBIOBASE
33883	FILE FEDRIP
409	FILE FOMAD
4771	FILE FOREGE
14246	FILE FROSTI
23161	FILE FSTA
280023	FILE GENBANK
9149	FILE HEALSAFE
127878	FILE IFIPAT
805	FILE IMSPRODUCT
129756	FILE JICST-EPLUS
2917	FILE KOSMET
233106	FILE LIFESCI
4639	FILE MEDICONF
668920	FILE MEDLINE
7620	FILE NIOSHTIC
81836	FILE NTIS
924	FILE NUTRACEUT
11088	FILE OCEAN
380600	FILE PASCAL

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            3040   FILE PCTGEN
             698   FILE PHAR
            5422   FILE PHARMAML
             328   FILE PHIC
           41703   FILE PHIN
          873381   FILE PROMT
             898   FILE RDISCLOSURE
          585255   FILE SCISEARCH
              11   FILE SYNTHLINE
          291675   FILE TOXCENTER
          487796   FILE USPATFULL
           18955   FILE USPAT2
            1340   FILE VETB
            3677   FILE VETU
          350789   FILE WPIDS
          350789   FILE WPINDEX
L1              QUE (RGS OR REGULAT? OR G PROTEIN)
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     FILE 'PROMT, CAPLUS, BIOSIS, MEDLINE, SCISEARCH, EMBASE, USPATFULL,
     PASCAL, WPIDS, ESBIOBASE, TOXCENTER, BIOTECHNO, LIFESCI, CABA, CANCERLIT,
     BIOBUSINESS, JICST-EPLUS, IFIPAT, NTIS, AGRICOLA' ENTERED AT 13:09:53 ON
     09 JAN 2004
L2          195 S L1 AND (REGULAT? G(W)PROTEIN SIGNAL?)
L3           52 S L2 AND (ISOLAT? OR PURIF? OR CHARACTER?)
L4           39 DUP REM L3 (13 DUPLICATES REMOVED)
```

=> d l4 ibib ab 1-28

L4 ANSWER 1 OF 39 USPATFULL on STN
ACCESSION NUMBER: 2004:7432 USPATFULL
TITLE: Methods and reagents for modulating cholesterol levels
INVENTOR(S): Hayden, Michael R., Vancouver, CANADA
Brooks-Wiison, Angela R., Richmond, CANADA
Pimstone, Simon N., Vancouver, CANADA

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004005666	A1	20040108
APPLICATION INFO.:	US 2003-452510	A1	20030602 (10)

RELATED APPLN. INFO.: Division of Ser. No. US 2000-526193, filed on 15 Mar 2000, GRANTED, Pat. No. US 6617122

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-124702P	19990315 (60)
	US 1999-138048P	19990608 (60)
	US 1999-139600P	19990617 (60)
	US 1999-151977P	19990901 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: CARELLA, BYRNE, BAIN, GILFILLAN,, CECCHI, STEWART & OLSTEIN, 6 Becker Farm Road, Roseland, NJ, 07068
NUMBER OF CLAIMS: 65
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 76 Drawing Page(s)
LINE COUNT: 5730
AB The invention features ABC1 nucleic acids and polypeptides for the diagnosis and treatment of abnormal cholesterol **regulation**. The invention also features methods for identifying compounds for modulating cholesterol levels in an animal (e.g., a human).

L4 ANSWER 2 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2003:825426 CAPLUS
TITLE: Methods for measuring **RGS** protein phosphorylation by **G protein-regulated** kinases
AUTHOR(S): Hollinger, Susanne; Hepler, John R.
CORPORATE SOURCE: Department of Pharmacology, Emory University School of Medicine, Atlanta, GA, USA
SOURCE: Methods in Molecular Biology (Totowa, NJ, United States) (2004), 237(G Protein Signaling), 205-219
CODEN: MMBIED; ISSN: 1064-3745
PUBLISHER: Humana Press Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Little is known about cellular **regulation** of the **regulators** of **G protein** signaling (**RGS**) proteins, principal players in **G protein** signaling. These proteins are known for their capacity to neg. **regulate** **G protein signals**, however, their chief cellular functions may expand beyond this limited role. Comprehensive understanding of cellular roles of **RGS** proteins requires knowledge of their **regulation** by short latency and inducible signals, such as kinase activation by **G proteins**. A no. of **RGS** proteins are phosphorylated in cells, with varied effects on their function and localization. These studies focus on RGS14, which contains recognition motifs for several **G protein -regulated** kinases. Procedures used in our lab. to study the phosphorylation of RGS14 are outlined, and the method used to

purify RGS14 is described with notes on complications that may be encountered. Std. protocols used to investigate the recognition of **RGS** proteins by 3-5-cyclic adenosine monophosphate (cAMP)-dependent protein kinase (PKA), extracellular signal-**regulated** kinase (ERK), and protein kinase C (PKC) are described, followed by strategies used to establish the specific amino acids modified by these kinases. Although this chapter focuses on investigations into RGS14, the protocols described are readily modified for other **RGS** proteins.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 39 USPATFULL on STN

ACCESSION NUMBER: 2003:288614 USPATFULL

TITLE: Analysis method

INVENTOR(S): Ward, Neil Raymond, Oxford, UNITED KINGDOM
Mundy, Christopher Robert, Oxford, UNITED KINGDOM
Kan, On, Oxford, UNITED KINGDOM
Harris, Robert Alan, Oxford, UNITED KINGDOM
White, Jonathan, Oxford, UNITED KINGDOM
Binley, Katie Mary, Oxford, UNITED KINGDOM
Rayner, William Nigel, Oxford, UNITED KINGDOM
Naylor, Stuart, Oxford, UNITED KINGDOM
Kingsman, Susan Mary, Oxford, UNITED KINGDOM
Krige, David, Oxford, UNITED KINGDOM

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003203372	A1	20031030
APPLICATION INFO.:	US 2002-170385	A1	20020612 (10)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. WO 2002-GB1662, filed on 8 Apr 2002, UNKNOWN Continuation-in-part of Ser. No. WO 2001-GB5458, filed on 10 Dec 2001, UNKNOWN

	NUMBER	DATE
PRIORITY INFORMATION:	GB 2001-9008	20010410
	GB 2000-30076	20001208
	GB 2001-3156	20010208
	GB 2001-25666	20011025

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: Bruce D. Grant, Morrison & Foerster LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA, 92130

NUMBER OF CLAIMS: 84

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 98 Drawing Page(s)

LINE COUNT: 14993

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to novel methods for the identification of genes and gene products that are implicated in certain disease states. According to the invention, there is provided a method for the identification of a gene that is implicated in a specific disease or physiological condition, said method comprising the steps of comparing: i) the transcriptome or proteome of a first specialized cell type that is implicated in the disease or condition under first and second experimental conditions; with ii) the transcriptome or proteome of a second specialized cell type under said first and said second experimental conditions; and identifying as a gene implicated in the disease or physiological condition, a gene that is differentially **regulated** in the two specialized cell types under the first and second experimental conditions. The invention also relates to novel genes and gene products identified using these methods.

L4 ANSWER 4 OF 39 USPATFULL on STN

ACCESSION NUMBER: 2003:258639 USPATFULL

TITLE: 207 human secreted proteins

INVENTOR(S): Ni, Jian, Germantown, MD, UNITED STATES
Ebner, Reinhard, Gaithersburg, MD, UNITED STATES
LaFleur, David W., Washington, DC, UNITED STATES
Moore, Paul A., Germantown, MD, UNITED STATES
Olsen, Henrik S., Gaithersburg, MD, UNITED STATES
Rosen, Craig A., Laytonsville, MD, UNITED STATES
Ruben, Steven M., Olney, MD, UNITED STATES
Soppet, Daniel R., Centreville, VA, UNITED STATES
Young, Paul E., Gaithersburg, MD, UNITED STATES
Shi, Yanggu, Gaithersburg, MD, UNITED STATES
Florence, Kimberly A., Rockville, MD, UNITED STATES
Wei, Ying-Fei, Berkeley, CA, UNITED STATES
Florence, Charles, Rockville, MD, UNITED STATES
Hu, Jing-Shan, Mountain View, CA, UNITED STATES
Li, Yi, Sunnyvale, CA, UNITED STATES
Kyaw, Hla, Frederick, MD, UNITED STATES
Fischer, Carrie L., Burke, VA, UNITED STATES
Ferrie, Ann M., Painted Post, NY, UNITED STATES
Fan, Ping, Potomac, MD, UNITED STATES
Feng, Ping, Gaithersburg, MD, UNITED STATES
Endress, Gregory A., Florence, MA, UNITED STATES
Dillon, Patrick J., Carlsbad, CA, UNITED STATES
Carter, Kenneth C., North Potomac, MD, UNITED STATES
Brewer, Laurie A., St. Paul, MN, UNITED STATES
Yu, Guo-Liang, Berkeley, CA, UNITED STATES
Zeng, Zhizhen, Lansdale, PA, UNITED STATES
Greene, John M., Gaithersburg, MD, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003181692	A1	20030925
APPLICATION INFO.:	US 2001-933767	A1	20010822 (9)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. WO 2001-US5614, filed on 21 Feb 2001, PENDING Continuation-in-part of Ser. No. US 1998-205258, filed on 4 Dec 1998, PENDING

	NUMBER	DATE
PRIORITY INFORMATION:	US 2000-184836P	20000224 (60)
	US 2000-193170P	20000329 (60)
	US 1997-48885P	19970606 (60)
	US 1997-49375P	19970606 (60)
	US 1997-48881P	19970606 (60)
	US 1997-48880P	19970606 (60)
	US 1997-48896P	19970606 (60)
	US 1997-49020P	19970606 (60)
	US 1997-48876P	19970606 (60)
	US 1997-48895P	19970606 (60)
	US 1997-48884P	19970606 (60)
	US 1997-48894P	19970606 (60)
	US 1997-48971P	19970606 (60)
	US 1997-48964P	19970606 (60)
	US 1997-48882P	19970606 (60)
	US 1997-48899P	19970606 (60)
	US 1997-48893P	19970606 (60)
	US 1997-48900P	19970606 (60)
	US 1997-48901P	19970606 (60)
	US 1997-48892P	19970606 (60)
	US 1997-48915P	19970606 (60)
	US 1997-49019P	19970606 (60)
	US 1997-48970P	19970606 (60)

US 1997-48972P	19970606 (60)
US 1997-48916P	19970606 (60)
US 1997-49373P	19970606 (60)
US 1997-48875P	19970606 (60)
US 1997-49374P	19970606 (60)
US 1997-48917P	19970606 (60)
US 1997-48949P	19970606 (60)
US 1997-48974P	19970606 (60)
US 1997-48883P	19970606 (60)
US 1997-48897P	19970606 (60)
US 1997-48898P	19970606 (60)
US 1997-48962P	19970606 (60)
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US 1997-48877P	19970606 (60)
US 1997-48878P	19970606 (60)
US 1997-57645P	19970905 (60)
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US 1997-57668P	19970905 (60)
US 1997-57635P	19970905 (60)
US 1997-57627P	19970905 (60)
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US 1997-57644P	19970905 (60)
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US 1997-57760P	19970905 (60)
US 1997-57776P	19970905 (60)
US 1997-57778P	19970905 (60)
US 1997-57629P	19970905 (60)
US 1997-57628P	19970905 (60)
US 1997-57777P	19970905 (60)
US 1997-57634P	19970905 (60)
US 1997-70923P	19971218 (60)
US 1998-92921P	19980715 (60)
US 1998-94657P	19980730 (60)
US 1997-70923P	19971218 (60)
US 1998-92921P	19980715 (60)
US 1998-94657P	19980730 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: HUMAN GENOME SCIENCES INC, 9410 KEY WEST AVENUE, ROCKVILLE, MD, 20850
NUMBER OF CLAIMS: 23
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 10 Drawing Page(s)

LINE COUNT: 32746
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to novel human secreted proteins and isolated nucleic acids containing the coding regions of the genes encoding such proteins. Also provided are vectors, host cells, antibodies, and recombinant methods for producing human secreted proteins. The invention further relates to diagnostic and therapeutic methods useful for diagnosing and treating diseases, disorders, and/or conditions related to these novel human secreted proteins.

L4 ANSWER 5 OF 39 USPATFULL on STN
ACCESSION NUMBER: 2003:219631 USPATFULL
TITLE: Full-length human cDNAs encoding potentially secreted proteins
INVENTOR(S): Dumas Milne Edwards, Jean-Baptiste, Paris, FRANCE
Bougueleret, Lydie, Petit Lancy, SWITZERLAND
Jobert, Severin, Paris, FRANCE

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003152921	A1	20030814
APPLICATION INFO.:	US 2001-876997	A1	20010608 (9)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2000-731872, filed on 7 Dec 2000, PENDING

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-169629P	19991208 (60)
	US 2000-187470P	20000306 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Frank C. Eisenschenk, Ph.D., SALIWANCHIK, LLOYD & SALIWANCHIK, 2421 N.W. 41 STREET, SUITE A-1, GAINESVILLE, FL, 32606-6669
NUMBER OF CLAIMS: 22
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Page(s)
LINE COUNT: 27600
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention concerns GENSET polynucleotides and polypeptides. Such GENSET products may be used as reagents in forensic analyses, as chromosome markers, as tissue/cell/organelle-specific markers, in the production of expression vectors. In addition, they may be used in screening and diagnosis assays for abnormal GENSET expression and/or biological activity and for screening compounds that may be used in the treatment of GENSET-related disorders.

L4 ANSWER 6 OF 39 USPATFULL on STN
ACCESSION NUMBER: 2003:213627 USPATFULL
TITLE: Phage displayed PDZ domain ligands
INVENTOR(S): Held, Heike A., Oakland, CA, UNITED STATES
Lasky, Laurence A., Sausalito, CA, UNITED STATES
Laura, Richard P., San Bruno, CA, UNITED STATES
Sidhu, Sachdev S., San Francisco, CA, UNITED STATES
Wong, Wai Lee Tan, Los Altos, CA, UNITED STATES
Wu, Yan, Foster City, CA, UNITED STATES
PATENT ASSIGNEE(S): GENENTECH, INC. (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003148264	A1	20030807
APPLICATION INFO.:	US 2002-190082	A1	20020703 (10)

	NUMBER	DATE

PRIORITY INFORMATION:	US 2001-303634P	20010706 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	GENENTECH, INC., 1 DNA WAY, SOUTH SAN FRANCISCO, CA, 94080	
NUMBER OF CLAIMS:	50	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	17 Drawing Page(s)	
LINE COUNT:	8976	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention pertains to a method of identifying PDZ interacting polypeptides, said polypeptides, and uses of said polypeptides.

L4 ANSWER 7 OF 39 USPATFULL on STN

ACCESSION NUMBER:	2003:194472 USPATFULL		
TITLE:	Genes **regulated** in dendritic cell differentiation		
INVENTOR(S):	Peterson, David P., San Jose, CA, UNITED STATES Pearson, Cecilia I., Palo Alto, CA, UNITED STATES Cocks, Benjamin G., Sunnyvale, CA, UNITED STATES		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003134283	A1	20030717
APPLICATION INFO.:	US 2001-971392	A1	20011003 (9)
	NUMBER		DATE
PRIORITY INFORMATION:	US 2000-237652P		20001003 (60)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	INCYTE GENOMICS, INC., 3160 PORTER DRIVE, PALO ALTO, CA, 94304		
NUMBER OF CLAIMS:	20		
EXEMPLARY CLAIM:	1		
LINE COUNT:	2921		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a combination comprising a plurality of cDNAs which are differentially expressed in dendritic cells, which may be used in their entirety or in part to diagnose, to stage, to treat, or to monitor the treatment of a subject with cancer, infectious disease, autoimmunity, allergy, and graft versus host disease or to enhance a vaccine.

L4 ANSWER 8 OF 39 USPATFULL on STN

ACCESSION NUMBER:	2003:146313 USPATFULL		
TITLE:	Novel cell-based assays for **G-protein** -coupled receptor-mediated activities		
INVENTOR(S):	Yao, Yong, Gaithersburg, MD, UNITED STATES Cao, Liang, Bethesda, MD, UNITED STATES		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003100059	A1	20030529
APPLICATION INFO.:	US 2002-87217	A1	20020304 (10)
	NUMBER		DATE
PRIORITY INFORMATION:	US 2001-330663P		20011026 (60)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	MORGAN LEWIS & BOCKIUS LLP, 1111 PENNSYLVANIA AVENUE NW, WASHINGTON, DC, 20004		

NUMBER OF CLAIMS: 102
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 24 Drawing Page(s)
LINE COUNT: 2799
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed are compositions and methods for their use, such as in identifying **G-protein**-coupled receptors, ligands and compounds that modulate the activities of **G-protein** -coupled receptors. The compositions and methods employ cyclic nucleotide-gated channels and fluorescence dyes in detecting changes of intracellular cAMP levels in response to the stimulation of **G-protein**-coupled receptors. Activation of the **G-protein**-coupled receptors can be detected in a variety of assays, including cell-based imaging assays with fluorescence microscopes and high throughput assays with multi-well plates and fluorescence plate readers.

L4 ANSWER 9 OF 39 USPATFULL on STN
ACCESSION NUMBER: 2003:70973 USPATFULL
TITLE: Method of increasing the contractility of a heart, a heart muscle or cells of a heart muscle
INVENTOR(S): Ungerer, Martin, Munchen, GERMANY, FEDERAL REPUBLIC OF
Munch, Gotz, Munchen, GERMANY, FEDERAL REPUBLIC OF
Baumgartner, Christine, Munchen, GERMANY, FEDERAL REPUBLIC OF
Rosport, Kai, Munchen, GERMANY, FEDERAL REPUBLIC OF
Laugwitz, Karl-Ludwig, Munchen, GERMANY, FEDERAL REPUBLIC OF
Lohse, Martin, Wurzburg, GERMANY, FEDERAL REPUBLIC OF

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2003049258	A1	20030313	
APPLICATION INFO.:	US 2001-951030	A1	20010911	(9)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MYERS BIGEL SIBLEY & SAJOVEC, PO BOX 37428, RALEIGH, NC, 27627
NUMBER OF CLAIMS: 36
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 12 Drawing Page(s)
LINE COUNT: 1716
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method of increasing the contractility of a heart, a heart muscle or cells of a heart muscle i by administering an agent capable of binding to a phosducin binding site of G.beta..gamma. is provided. Said phosducin binding site is preferably a binding site of N-terminal truncated phosducin. Further, methods of identifying compounds capable of increasing the contractility of a heart muscle and methods of identifying compounds capable of inhibiting G.beta..gamma.-mediated processes are provided.

L4 ANSWER 10 OF 39 USPATFULL on STN
ACCESSION NUMBER: 2003:30255 USPATFULL
TITLE: B-ephrin **regulation** of **G-protein** coupled chemoattraction, compositions, and methods of use
INVENTOR(S): Flanagan, John G., Newton, MA, UNITED STATES
Lu, Qiang, Brookline, MA, UNITED STATES
Sun, Edna E., Brookline, MA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003022202	A1	20030130

APPLICATION INFO.: US 2002-113794 A1 20020401 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-280260P	20010330 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: BROMBERG & SUNSTEIN LLP, 125 SUMMER STREET, BOSTON, MA, 02110-1618
NUMBER OF CLAIMS: 61
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Page(s)
LINE COUNT: 1905
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Transmembrane B ephrins and their Eph receptors signal bi-directionally. The presently claimed invention describes a cytoplasmic protein, designated PDZ-RGS3, which binds B ephrins through a PDZ domain, and has a **regulator** of heterotrimeric **G protein** signaling (**RGS**) domain. PDZ-RGS3 mediates signaling from the ephrin-B cytoplasmic tail. SDF-1, a chemokine with a **G protein** coupled receptor, or BDNF, act as chemoattractants for cerebellar granule cells, with SDF-1 action being selectively inhibited by soluble EphB receptor. The claimed invention reveals a pathway that links reverse signaling to cellular guidance, uncovers a novel mode of control for **G proteins**, and demonstrates a mechanism for selective **regulation** of responsiveness to neuronal guidance cues. Further, compositions and methods of use are provided for modulating cell migration as a function of chemokines and GPCR interaction, to aid in the treatment of disease states and medical conditions, including cancer and immune responses such as allergy and autoimmune responses. In one embodiment, a method of altering the sensitivity of a cell to a chemokine is provided using a PDZ-RGS3 protein.

L4 ANSWER 11 OF 39 USPATFULL on STN
ACCESSION NUMBER: 2003:240312 USPATFULL
TITLE: Process for identifying modulators of ABC1 activity
INVENTOR(S): Hayden, Michael R., Vancouver, CANADA
Brooks-Wiison, Angela R., Richmond, CANADA
Pimstone, Simon N., Vancouver, CANADA
PATENT ASSIGNEE(S): Xenon Genetics, Inc., Burnaby, CANADA (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6617122	B1	20030909
APPLICATION INFO.:	US 2000-526193		20000315 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-151977P	19990901 (60)
	US 1999-139600P	19990617 (60)
	US 1999-138048P	19990608 (60)
	US 1999-124702P	19990315 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Prouty, Rebecca E.
ASSISTANT EXAMINER: Steadman, David J.
LEGAL REPRESENTATIVE: Olstein, Elliot M., Grant, Alan J.
NUMBER OF CLAIMS: 51
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 76 Drawing Figure(s); 76 Drawing Page(s)
LINE COUNT: 5625
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention features ABC1 nucleic acids and polypeptides for the diagnosis and treatment of abnormal cholesterol **regulation**. The invention also features methods for identifying compounds for modulating cholesterol levels in an animal (e.g., a human).

L4 ANSWER 12 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2003:714191 CAPLUS
DOCUMENT NUMBER: 140:3369
TITLE: High level of cannabinoid receptor 1, absence of **regulator** of **G protein** signalling 13 and differential expression of Cyclin D1 in mantle cell lymphoma
AUTHOR(S): Islam, T. C.; Asplund, A. C.; Lindvall, J. M.; Nygren, L.; Liden, J.; Kimby, E.; Christensson, B.; Smith, C. I. E.; Sander, B.
CORPORATE SOURCE: Karolinska Institutet, Clinical Research Center, Huddinge University Hospital, Stockholm, Swed.
SOURCE: Leukemia (2003), 17(9), 1880-1890
CODEN: LEUKED; ISSN: 0887-6924
PUBLISHER: Nature Publishing Group
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Mantle cell lymphoma (MCL) is a moderately aggressive B-cell lymphoma that responds poorly to currently used therapeutic protocols. In order to identify tumor **characteristics** that improve the understanding of biol. of MCL, anal. of oligonucleotide microarrays were used to define specific gene expression profiles. Biopsy samples of MCL cases were compared to reactive lymphoid tissue. Among genes differentially expressed in MCL were genes that are involved in the **regulation** of proliferation, cell signaling, adhesion and homing. Furthermore, some genes with previously unknown function, such as C11orf32, C2orf10, TBC1D9 and ABCA6 were found to be differentially expressed in MCL compared to reactive lymphoid tissue. Of special interest was the high expression of the cannabinoid receptor 1 (CB1) gene in all MCL cases analyzed. These results were further confirmed at the cellular and protein level by immunocytochem. staining and immunoblotting of MCL cells. Furthermore, there was a reduced expression of a **regulator** of **G protein** signaling, RGS13 in all MCLs, with a complete absence in the majority of cases while present in control lymphoid tissue. These results were further confirmed by PCR. Sequencing of the RGS13 gene revealed changes suggesting polymorphisms, indicating that downregulation of the expression of RGS13 is not related to mutations, but may serve as a new specific marker for MCL. Moreover, comparison between individual cases of MCL, revealed that the CCND1 gene appears to be differently expressed in MCL cases with high vs low proliferative activity.
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 39 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2003:250009 BIOSIS
DOCUMENT NUMBER: PREV200300250009
TITLE: Interaction of human RGS6 with DNA methyltransferase 1 associated protein.
AUTHOR(S): Liu, Zhengyu [Reprint Author]; Tapan, Chatterjee K.; Fisher, Rory A.
CORPORATE SOURCE: Department of Pharmacology, University of Iowa, BSB 2-344, Iowa City, IA, 52242, USA
zhengyu-liu@uiowa.edu; tapan-chatterjee@uiowa.edu; rory-fisher@uiowa.edu
SOURCE: FASEB Journal, (March 2003) Vol. 17, No. 4-5, pp. Abstract No. 844.10. http://www.fasebj.org/. e-file.
Meeting Info.: FASEB Meeting on Experimental Biology: Translating the Genome. San Diego, CA, USA. April 11-15, 2003. FASEB.

ISSN: 0892-6638 (ISSN print).
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 28 May 2003
Last Updated on STN: 28 May 2003

AB RGS6 is a member of a subfamily of mammalian **RGS** proteins that contain DEP and GGL domains. **RGS** proteins are believed to negatively **regulate G protein signaling** by virtue of their GAP activity toward G? subunits. RGS6 exists in multiple splice forms that differ by a long (6L) or short (6S) N-terminus, complete or incomplete GGL domains, in combination with various C-terminal domains. Subcellular distribution patterns of RGS6 splice forms differ with some splice forms exclusively cytoplasmic (RGS6L) and others predominantly nuclear (RGS6S), where **G proteins** are not believed to exist. We undertook yeast two-hybrid analysis to screen for nuclear RGS6 binding proteins and identified and **isolated** DMAP1. DMAP1 is a component of the DNA methyltransferase 1 complex that is believed to be involved in repression of newly replicated genes. Interaction between RGS6 and DMAP1 in COS-7 cells was shown by co-immunoprecipitation analysis. Both RGS6L and RGS6L(-GGL) co-precipitated DMAP1 from COS-7 cell lysates. DMAP1 localized in the nucleus of COS-7 cells. Co-expression of DMAP1 with RGS6L splice forms promoted nuclear migration of RGS6L and their co-localization with DMAP1. RGS6S splice forms, normally localized in the nucleus, also co-localized with DMAP1. These findings identify DMAP1 as an RGS6 interacting protein and suggest RGS6 may be involved in novel nuclear functions.

L4 ANSWER 14 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2002:483008 CAPLUS
DOCUMENT NUMBER: 137:58589
TITLE: Protein, cDNA sequences of human and mouse protein **RGS** (**regulator** of **G-protein** signaling) and uses thereof
INVENTOR(S): Hodge, Martin R.; Yowe, David
PATENT ASSIGNEE(S): Millenium Pharmaceuticals, Inc., USA
SOURCE: U.S., 42 pp., Cont.-in-part of U. S. 6,274,362.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6410240	B1	20020625	US 2000-498959	20000204
US 6274362	B1	20010814	US 1999-244314	19990204
US 2002081683	A1	20020627	US 2001-894749	20010627

PRIORITY APPLN. INFO.: US 1999-244314 A2 19990204

AB The present invention discloses protein and cDNA sequences of human and mouse protein **RGS** (**regulator** of **G-protein** signaling) and their applications in drug screening, diagnostic and therapeutical uses. In addn. to **isolated**, full-length **RGS** proteins, the invention further provides **isolated RGS** fusion proteins, antigenic peptides, and anti-**RGS** antibodies. The invention also relates to **RGS** nucleic acid mols., recombinant expression vectors contg. a nucleic acid mol. of the invention, host cells into which the expression vectors have been introduced, effects of the recombinant **RGS** protein on the signal transduction pathway proteins, and nonhuman transgenic animals in which an **RGS** gene has been introduced or disrupted. Diagnostic, screening, and therapeutic methods for disorders **characterized** by aberrant **RGS** protein activity or nucleic acid expression by utilizing compns. of the invention are also provided.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 39 USPATFULL on STN
ACCESSION NUMBER: 2002:191539 USPATFULL
TITLE: Full-length human cDNAs encoding potentially secreted proteins
INVENTOR(S): Milne Edwards, Jean-Baptiste Dumas, Paris, FRANCE
Bougueleret, Lydie, Petit Lancy, SWITZERLAND
Jobert, Severin, Paris, FRANCE

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002102604	A1	20020801
APPLICATION INFO.:	US 2000-731872	A1	20001207 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-169629P	19991208 (60)
	US 2000-187470P	20000306 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: John Lucas, Ph.D., J.D., Genset Corporation, 10665 Srrento Valley Road, San Diego, CA, 92121-1609
NUMBER OF CLAIMS: 29
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Page(s)
LINE COUNT: 28061
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention concerns GENSET polynucleotides and polypeptides. Such GENSET products may be used as reagents in forensic analyses, as chromosome markers, as tissue/cell/organelle-specific markers, in the production of expression vectors. In addition, they may be used in screening and diagnosis assays for abnormal GENSET expression and/or biological activity and for screening compounds that may be used in the treatment of GENSET-related disorders.

L4 ANSWER 16 OF 39 USPATFULL on STN
ACCESSION NUMBER: 2002:157084 USPATFULL
TITLE: Novel **RGS**-containing molecules and uses thereof
INVENTOR(S): Hodge, Martin R., Arlington, MA, UNITED STATES
Yowe, David, North Quincy, MA, UNITED STATES
PATENT ASSIGNEE(S): Millennium Pharmaceuticals, Inc. (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002081683	A1	20020627
APPLICATION INFO.:	US 2001-894749	A1	20010627 (9)

RELATED APPLN. INFO.: Division of Ser. No. US 1999-244314, filed on 4 Feb 1999, GRANTED, Pat. No. US 6274362
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: ALSTON & BIRD LLP, BANK OF AMERICA PLAZA, 101 SOUTH TRYON STREET, SUITE 4000, CHARLOTTE, NC, 28280-4000
NUMBER OF CLAIMS: 19
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 2772
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel **RGS** polypeptides, proteins, and nucleic acid molecules are disclosed. In addition to **isolated**, full-length **RGS** proteins, the invention further provides **isolated** **RGS** fusion proteins, antigenic peptides, and anti-**RGS**

antibodies. The invention also provides **RGS** nucleic acid molecules, recombinant expression vectors containing a nucleic acid molecule of the invention, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which an **RGS** gene has been introduced or disrupted. Diagnostic, screening, and therapeutic methods utilizing compositions of the invention are also provided.

L4 ANSWER 17 OF 39 USPATFULL on STN

ACCESSION NUMBER:	2002:60943 USPATFULL		
TITLE:	NOVEL **REGULATOR** OF CELL SIGNALING		
INVENTOR(S):	HILLMAN, JENNIFER L., SAN JOSE, CA, UNITED STATES GOLI, SURYA, SUNNYVALE, CA, UNITED STATES		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002034777	A1	20020321
APPLICATION INFO.:	US 1998-206639	A1	19981207 (9)
RELATED APPLN. INFO.:	Division of Ser. No. US 1996-748483, filed on 8 Nov 1996, GRANTED, Pat. No. US 5955314		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	LUCY J BILLINGS, INCYTE PHARMACEUTICALS INC, 3174 PORTER DRIVE, PALO ALTO, CA, 94304		
NUMBER OF CLAIMS:	18		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	4 Drawing Page(s)		
LINE COUNT:	2023		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a human reguslator of **G-protein** signaling (HRGS) and polynucleotides which identify and encode HRGS. The invention also provides genetically engineered expression vectors and host cells comprising the nucleic acid sequences encoding HRGS and a method for producing HRGS. The invention also provides for agonists, antibodies, or antagonists specifically binding HRGS, and their use, in the prevention and treatment of diseases associated with expression of HRGS. Additionally, the invention provides for the use of antisense molecules to polynucleotides encoding HRGS for the treatment of diseases associated with the expression of HRGS. The invention also provides diagnostic assays which utilize the polynucleotide, or fragments or the complement thereof, and antibodies specifically binding HRGS.

L4 ANSWER 18 OF 39 USPATFULL on STN

ACCESSION NUMBER:	2002:88259 USPATFULL		
TITLE:	DNA molecules comprising a promoter capable of conferring expression of a heterologous DNA sequence		
INVENTOR(S):	Baumeister, Ralf, Grobenzell, GERMANY, FEDERAL REPUBLIC OF		
PATENT ASSIGNEE(S):	EleGene GmbH, Martinsreid, GERMANY, FEDERAL REPUBLIC OF (non-U.S. corporation)		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6376239	B1	20020423
APPLICATION INFO.:	US 1997-832867		19970404 (8)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	GRANTED		
PRIMARY EXAMINER:	Crouch, Deborah		
ASSISTANT EXAMINER:	Brunouskis, Peter		
LEGAL REPRESENTATIVE:	Corless, Peter F., Edwards & Angell, LLP		
NUMBER OF CLAIMS:	10		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	64 Drawing Figure(s); 57 Drawing Page(s)		

LINE COUNT: 1738
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Described and claimed are recombinant DNA molecules including the promoter region of the sel-12 gene of Caenorhabditis elegans (C. elegans) or promoter regions of genes homologous to the sel-12 gene, being capable of conferring expression of a heterologous DNA sequence in all neural cells, such as at all stages of development. Vectors including such recombinant DNA molecules are provided. Described and claimed also are pharmaceutical and diagnostic compositions as well as kits including the aforementioned recombinant DNA molecules and vectors. Furthermore, transgenic non-human animals, including the aforesaid recombinant DNA molecules or vectors stably integrated into their genome and their use for the identification of substances capable of complementing a neuronal disorder are described and claimed. Also provided are uses of the before described DNA molecules, vectors and substances for the preparation of a pharmaceutical composition for treating, preventing, and/or delaying a neuronal disorder in a subject. Furthermore, the use of the aforementioned DNA molecules and vectors for the preparation of pharmaceutical compositions for inducing a neuronal disorder in a non-human animal is described and claimed.

L4 ANSWER 19 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:592648 CAPLUS
TITLE: Promotion of glioma C6 cells proliferation by over-expressed RGS16
AUTHOR(S): Zhang, Feng; Li, Qing; Zhang, Bicheng; Ye, Jing; Chen, Guangsheng; Wang, Li; Lin, Shengcai
CORPORATE SOURCE: Xijing Hospital, Fourth Military Medical University, Xian, Shanxi Province, 710033, Peop. Rep. China
SOURCE: Disi Junyi Daxue Xuebao (2002), 23(10), 950-952
CODEN: DJDXEG; ISSN: 1000-2790
PUBLISHER: Disi Junyi Daxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Study the effect of **regulators** of **G protein** signaling 16 (RGS16) on the biol. **characteristics** of glioma C6 cells. PCMV5-RGS16 was transfected into C6 cells by lipofectin. The morphol. and adhesive changes of the cells were obsd. under an inverted microscope. Proliferation of C6 cells was measured by 3H-thymidine (3H-TdR) assay after gradient transfections of pCMV5-RGS16 and pCMV5. Expression of RGS16 was examd. by immunocytochem. method both before and after the transfection. Flow cytometry was adopted to measure changes in the fraction no. of the cell cycle phase and to detect whether RGS16 could induce apoptosis of C6 cell. The results showed that 24 h after the transfection of pCMV5-RGS16 approx. 30% of C6 cells grew round and 13% expressed RGS16; 36 h later the pos. relationship between the proliferation of C6 cells and the gradient transfections of pCMV5-RGS16 was displayed by 3H-TdR assay. Flow cytometry showed that the fraction no. of G1 phase of C6 cells reduced by 10% and that of S phase accumulated by 14% and RGS16 could not induce apoptosis of C6 cells. RGS16 might promote the proliferation of C6 cells.

L4 ANSWER 20 OF 39 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2003:315552 BIOSIS
DOCUMENT NUMBER: PREV200300315552
TITLE: THE INVOLVEMENT OF RGS9 - 2 IN DEPRESSION AND ANXIETY - LIKE BEHAVIOR.
AUTHOR(S): Pudiak, C. M. [Reprint Author]; Rahman, Z. [Reprint Author]; Gold, S. J. [Reprint Author]; Neve, R. L.; Barrot, M. [Reprint Author]; Nestler, E. J. [Reprint Author]
CORPORATE SOURCE: Dept. of Psychiatry, UT Southwestern Medical Center, Dallas, TX, USA
SOURCE: Society for Neuroscience Abstract Viewer and Itinerary Planner, (2002) Vol. 2002, pp. Abstract No. 644.17.

http://sfn.scholarone.com. cd-rom.
Meeting Info.: 32nd Annual Meeting of the Society for Neuroscience. Orlando, Florida, USA. November 02-07, 2002. Society for Neuroscience.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 9 Jul 2003
Last Updated on STN: 9 Jul 2003

AB The nucleus accumbens (or ventral striatum) is best **characterized** as an important neural substrate for the reinforcing effects of drugs of abuse and natural rewards. Less attention has been given to a possible role for this brain region in depression, despite the fact that many of the symptoms observed in depressed individuals (anhedonia, decreased motivation) may be partly attributed to this region. RGS9-2, a GTPase activating protein that negatively **regulates G-protein signaling**, is highly expressed in the striatum, including the nucleus accumbens, where it has been shown to **regulate** dopamine D2 signaling and responsiveness to cocaine.) In the present study, we examined the possible influence of RGS9-2 in **regulating** affective state as well, using animal models (forced swim, elevated-plus maze, locomotor activity) of depression or anxiety-like behavior. Male, Sprague-Dawley rats injected bilaterally with herpes simplex virus expressing-RGS9-2 into the nucleus accumbens showed no change in baseline locomotor activity, or in anxiety-like behavior measured in the elevated-plus maze, but did show an increased latency to immobility in the forced-swim test; an antidepressant-like effect. Mice with a null mutation in the RGS9 gene also showed no change in locomotor activity, but did exhibit a decreased latency to immobility in the swim test; a depression-like effect. These results are consistent with a role for RGS9-2 in mediating a positive emotional response, and suggest that this striatum-enriched protein is an important **regulator** of affective state.

L4 ANSWER 21 OF 39 USPATFULL on STN
ACCESSION NUMBER: 2001:185450 USPATFULL
TITLE: Axin gene and uses thereof
INVENTOR(S): Constantini, Franklin, New York, NY, United States
Zeng, Li, New York, NY, United States
PATENT ASSIGNEE(S): The Trustees of Columbia University in the City of New York, New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6307019	B1	20011023	
APPLICATION INFO.:	US 1997-890865		19970710	(8)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Achutamurthy, Ponnathapu
ASSISTANT EXAMINER: Tung, Peter P.
LEGAL REPRESENTATIVE: White, John P.Cooper & Dunham LLP
NUMBER OF CLAIMS: 22
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 28 Drawing Figure(s); 27 Drawing Page(s)
LINE COUNT: 1795
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention provides an **isolated** nucleic acid which encodes Axin. This invention further provides an **isolated** nucleic acid which encodes a polypeptide comprising the amino acid sequence of Axin. This invention further provides a **purified** wildtype or mutant Axin. This invention further provides an oligonucleotide capable of distinguishing nucleic acids encoding mutant or wildtype Axin. This invention also provides various methods of use: such as a method for determining whether a subject carries a mutation in the axin gene, a

method of determining whether a subject has a predisposition for cancer, a method for treating a subject who has a predisposition to cancer, a method for determining whether a subject has cancer, a method for detecting a mutation in cancerous cells of the subject, a method of suppressing cells unable to **regulate** themselves and a method for identifying a chemical compound which is capable of suppressing cells unable to **regulate** themselves. This invention also provides a variety of pharmaceutical compositions and a method of treating a subject who has cancer comprising administration the pharmaceutical compositions. This invention also provides a transgenic, nonhuman mammal, specifically a transgenic expressing mutant Axin.

L4 ANSWER 22 OF 39 USPATFULL on STN
ACCESSION NUMBER: 2001:131081 USPATFULL
TITLE: **RGS**-containing molecules and uses thereof
INVENTOR(S): Hodge, Martin R., Arlington, MA, United States
Yowe, David, North Quincy, MA, United States
PATENT ASSIGNEE(S): Millennium Pharmaceuticals, Inc., Cambridge, MA, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6274362	B1	20010814	
APPLICATION INFO.:	US 1999-244314		19990204	(9)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Prouty, Rebecca E.
ASSISTANT EXAMINER: Rao, Manjunath M.
LEGAL REPRESENTATIVE: Alston & Bird LLP
NUMBER OF CLAIMS: 39
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 2668
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel **RGS** polypeptides, proteins, and nucleic acid molecules are disclosed. In addition to **isolated**, full-length **RGS** proteins, the invention further provides **isolated** **RGS** fusion proteins, antigenic peptides, and anti-**RGS** antibodies. The invention also provides **RGS** nucleic acid molecules, recombinant expression vectors containing a nucleic acid molecule of the invention, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which an **RGS** gene has been introduced or disrupted. Diagnostic, screening, and therapeutic methods utilizing compositions of the invention are also provided.

L4 ANSWER 23 OF 39 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2001:573967 BIOSIS
DOCUMENT NUMBER: PREV200100573967
TITLE: **RGS**-17, a novel Galpha o-interacting **regulator** of **G protein** signaling expressed in the limbic system.
AUTHOR(S): Ghahremani, M. H. [Reprint author]; Mao, H. [Reprint author]; Daigle, M. [Reprint author]; Albert, P. R. [Reprint author]
CORPORATE SOURCE: Neurosci Res Inst, Ottawa, ON, Canada
SOURCE: Society for Neuroscience Abstracts, (2001) Vol. 27, No. 2, pp. 1942. print.
Meeting Info.: 31st Annual Meeting of the Society for Neuroscience. San Diego, California, USA. November 10-15, 2001.
ISSN: 0190-5295.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)

LANGUAGE: English
OTHER SOURCE: Genbank-AF202257
ENTRY DATE: Entered STN: 12 Dec 2001
Last Updated on STN: 25 Feb 2002

AB The pertussis toxin-sensitive **G protein** Gao mediates signaling of many receptors, including the dopamine D2 receptor, and is among the most abundant proteins in the brain, yet the downstream targets of Go remain unclear. In order to identify novel effectors or **regulators** of Go action, we screened a human brain cDNA library (>1,000,000 clones) for Go (Go1-R179C)-interacting proteins using the yeast two-hybrid system. Among 8 positive clones, **RGS**-17 was identified and its sequence submitted to GenBank (Accession AF202257). **Regulators** of **G-protein** signaling (**RGS**) comprise at least 24 members containing a conserved **RGS** domain. They bind to Ga subunits to accelerate GTP hydrolysis, thereby deactivating **G-proteins**. Human **RGS**-17 protein contains an **RGS** domain and shares 94% amino acid identity to gallus gallus homolog and 92% to murine RGSZ2. It belongs to class A in the **RGS**-GAIP subfamily and contains the **characteristic** Cys-string motif. The interaction of **RGS** -17 with Go was confirmed by yeast mating assay (efficiency of 87%) and by in vitro interaction using bacterially expressed fusion proteins. Co-immunoprecipitation studies in mammalian cells are ongoing. Northern blot revealed strong expression of **RGS**-17 mRNA in the rat hippocampus/septum, but not in the mesencephalon or cerebellum. These results suggest that **RGS**-17 may **regulate G protein signaling** involved in control of mood and emotion.

L4 ANSWER 24 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:60848 CAPLUS
DOCUMENT NUMBER: 135:118383
TITLE: Molecular cloning and **characterization** of a novel **regulator** of **G-protein** signaling from mouse hematopoietic stem cells
AUTHOR(S): Park, In-Kyung; Klug, Christopher A.; Li, Kaijun; Jerabek, Libuse; Li, Linheng; Nanamori, Masakatsu; Neubig, Richard R.; Hood, Leroy; Weissman, Irving L.; Clarke, Michael F.
CORPORATE SOURCE: Department of Internal Medicine, Division of Hematology and Oncology, University of Michigan, Ann Arbor, MI, 48109, USA
SOURCE: Journal of Biological Chemistry (2001), 276(2), 915-923
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A novel **regulator** of **G-protein** signaling (**RGS**) has been **isolated** from a highly **purified** population of mouse long-term hematopoietic stem cells, and designated RGS18. It has 234 amino acids consisting of a central **RGS** box and short divergent NH2 and COOH termini. The calcd. mol. wt. of RGS18 is 27,610 and the isoelec. point is 8.63. Mouse RGS18 is expressed from a single gene and shows tissue specific distribution. It is most highly expressed in bone marrow followed by fetal liver, spleen, and then lung. In bone marrow, RGS18 level is highest in long-term and short-term hematopoietic stem cells, and is decreased as they differentiate into more committed multiple progenitors. The human RGS18 ortholog has a tissue-specific expression pattern similar to that of mouse RGS18. **Purified** RGS18 interacts with the .alpha. subunit of both Gi and Gq subfamilies. The results of in vitro GTPase single-turnover assays

using G.alpha.i indicated that RGS18 accelerates the intrinsic GTPase activity of G.alpha.i. Transient overexpression of RGS18 attenuated inositol phosphates prodn. via angiotensin receptor and transcriptional activation through cAMP-responsive element via M1 muscarinic receptor. This suggests RGS18 can act on Gq-mediated signaling pathways in vivo.
REFERENCE COUNT: 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 25 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:775435 CAPLUS
DOCUMENT NUMBER: 136:149794
TITLE: RGS18 is a myeloerythroid lineage-specific **regulator** of **G-protein** -signalling molecule highly expressed in megakaryocytes
AUTHOR(S): Yowe, David; Weich, Nadine; Prabhudas, Mercy; Poisson, Louis; Errada, Patrick; Kapeller, Rosanna; Yu, Kan; Faron, Laura; Shen, Minhui; Cleary, Jennifer; Wilkie, Thomas M.; Gutierrez-Ramos, Carlos; Hodge, Martin R.
CORPORATE SOURCE: Millennium Pharmaceuticals, Cambridge, MA, 02139, USA
SOURCE: Biochemical Journal (2001), 359(1), 109-118
CODEN: BIJOAK; ISSN: 0264-6021
PUBLISHER: Portland Press Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Myelopoiesis and lymphopoiesis are controlled by hematopoietic growth factors, including cytokines, and chemokines that bind to **G-protein**-coupled receptors (GPCRs). **Regulators** of **G-protein** signaling (RGSs) are a protein family that can act as GTPase-activating proteins for G.alpha.i- and G.alpha.q-class proteins. The authors have identified a new member of the R4 subfamily of **RGS** proteins, RGS18. RGS18 contains clusters of hydrophobic and basic residues, which are **characteristic** of an amphipathic helix within its first 33 amino acids. RGS18 mRNA was most highly abundant in megakaryocytes, and was also detected specifically in hematopoietic progenitor and myeloerythroid lineage cells. RGS18 mRNA was not detected in cells of the lymphoid lineage. RGS18 was also highly expressed in mouse embryonic 15-day livers, livers being the principal organ for hematopoiesis at this stage of fetal development. RGS1, RGS2 and RGS16, other members of the R4 subfamily, were expressed in distinct progenitor and mature myeloerythroid and lymphoid lineage blood cells. RGS18 was shown to interact specifically with the G.alpha.i-3 subunit in membranes from K562 cells. Furthermore, over-expression of RGS18 inhibited mitogen-activated-protein kinase activation in HEK-293/chemokine receptor 2 cells treated with monocyte chemotactic protein-1. In yeast cells, RGS18 over-expression complemented a pheromone-sensitive phenotype caused by mutations in the endogeneous yeast **RGS** gene, SST2. These data demonstrated that RGS18 was expressed most highly in megakaryocytes, and can modulate GPCR pathways in both mammalian and yeast cells in vitro. Hence RGS18 might have an important role in the **regulation** of megakaryocyte differentiation and chemotaxis.
REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 26 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:725911 CAPLUS
DOCUMENT NUMBER: 135:301656
TITLE: RGS9-1 is required for normal inactivation of mouse cone phototransduction
AUTHOR(S): Lyubarsky, A. L.; Chen, C.-K.; Naarendorp, F.; Zhang, X.; Wensel, T.; Simon, M. I.; Pugh, E. N., Jr.
CORPORATE SOURCE: F. M. Kirby Center and Department of Ophthalmology, University of Pennsylvania, Philadelphia, PA, 19104-6069, USA

SOURCE: Molecular Vision [online computer file] (2001), 7, 71-78
CODEN: MVEPFB; ISSN: 1090-0535
URL: http://www.molvis.org/molvis/v7/all/lyubarsky.pdf
PUBLISHER: Molecular Vision
DOCUMENT TYPE: Journal; (online computer file)
LANGUAGE: English
AB Purpose: To test the hypothesis that **Regulator** of **G-protein** Signaling 9 (RGS9-1) is necessary for the normal inactivation of retinal cones. Methods: Mice having the gene RGS9-1 inactivated in both alleles (RGS9-1 -/-) were tested between the ages 8-10 wk with electroretinog. (ERG) protocols that **isolate** cone-driven responses. Immunohistochem. was performed with a primary antibody against RGS9-1 (anti-RGS9-1c), with the secondary conjugated to fluorescein isothiocyanate, and with rhodamine-conjugated peanut agglutinin. Results: (1) Immunohistochem. showed RGS9-1 to be strongly expressed in the cones of wildtype (WT is C57BL/6) mice, but absent from the cones of RGS9-1 mice. (2) Cone-driven b-wave responses of dark-adapted RGS9-1 -/-mice had satg. amplitudes and sensitivities in the midwave and UV regions of the spectrum equal to or slightly greater than those of WT (C57BL/6) mice. (3) Cone-driven b-wave and a-wave responses of RGS9-1 -/- mice recovered much more slowly than those of WT after a strong conditioning flash: for a flash estd. to isomerize 1.2% of the M-cone pigment and 0.9% of the UV-cone pigment, recovery of 50% satg. amplitude was approx. 60-fold slower than in WT. Conclusions: (1) The amplitudes and sensitivities of the cone-driven responses indicate that cones and cone-driven neurons in RGS9-1 -/- mice have normal generator currents. (2) The greatly retarded recovery of cone-driven responses of RGS9-1 -/- mice relative to those of WT mice establishes that RGS9-1 is required for normal inactivation of the cone phototransduction cascades of both UV- and M-cones.
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 27 OF 39 USPATFULL on STN DUPLICATE 4
ACCESSION NUMBER: 2000:67885 USPATFULL
TITLE: **Regulators** of **G-protein** signalling
INVENTOR(S): Horvitz, H. Robert, Auburndale, MA, United States
Koelle, Michael, Somerville, MA, United States
PATENT ASSIGNEE(S): Massachusetts Institute of Technology, Cambridge, MA, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6069296		20000530	
APPLICATION INFO.:	US 1995-460505		19950602	(8)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Low, Christopher S. F.
LEGAL REPRESENTATIVE: Clark & Elbing, LLP
NUMBER OF CLAIMS: 22
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 10 Drawing Figure(s); 10 Drawing Page(s)
LINE COUNT: 1952
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed is substantially pure DNA encoding a C. elegans Egl-10 polypeptide; substantially pure Egl-10 polypeptide; methods of obtaining **RGS** encoding DNA and **RGS** polypeptides; and methods of using the **RGS** DNA and **RGS** polypeptides to **regulate G-protein signalling**.

L4 ANSWER 28 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:553589 CAPLUS
DOCUMENT NUMBER: 133:145928

TITLE: Protein and cDNA sequences encoding **RGS** (**regulators** of **G-protein** signaling) protein and uses thereof in drug screening, diagnostic, and therapeutic applications

INVENTOR(S): Hodge, Martin R.; Yowe, David

PATENT ASSIGNEE(S): Millennium Pharmaceuticals, Inc., USA

SOURCE: PCT Int. Appl., 105 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000046236	A2	20000810	WO 2000-US2977	20000204
WO 2000046236	A3	20001214		
W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6274362	B1	20010814	US 1999-244314	19990204
EP 1147213	A2	20011024	EP 2000-913367	20000204
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002535979	T2	20021029	JP 2000-597306	20000204
US 2002081683	A1	20020627	US 2001-894749	20010627

PRIORITY APPLN. INFO.: US 1999-244314 A 19990204
WO 2000-US2977 W 20000204

AB The invention provides protein and cDNA sequences encoding novel **RGS** (**regulators** of **G-protein** signaling) proteins. In addn. to **isolated**, full-length **RGS** proteins, the invention further provides **isolated** **RGS** fusion proteins, antigenic peptides, and anti-**RGS** antibodies. The invention also provides **RGS** nucleic acid mols., recombinant expression vectors contg. a nucleic acid mol. of the invention, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which an **RGS** gene has been introduced or disrupted. Diagnostic, drug screening, and therapeutic methods utilizing compns. of the invention are also provided.

=>

=> d l4 ibib ab 29-39

L4 ANSWER 29 OF 39 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2000:497630 BIOSIS
DOCUMENT NUMBER: PREV200000497751
TITLE: Functional roles of the two domains of phosducin and phosducin-like protein.
AUTHOR(S): Savage, Justin R.; McLaughlin, Joseph N.; Skiba, Nikolai P.; Hamm, Heidi E.; Willardson, Barry M. [Reprint author]
CORPORATE SOURCE: Department of Chemistry and Biochemistry, Brigham Young University, Provo, UT, 84602, USA
SOURCE: Journal of Biological Chemistry, (September 29, 2000) Vol. 275, No. 39, pp. 30399-30407. print.
CODEN: JBCHA3. ISSN: 0021-9258.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 15 Nov 2000
Last Updated on STN: 10 Jan 2002

AB Phosducin and phosducin-like protein **regulate G protein signaling** pathways by binding the betagamma subunit complex (Gbetagamma) and blocking Gbetagamma association with Galpha subunits, effector enzymes, or membranes. Both proteins are composed of two structurally independent domains, each constituting approximately half of the molecule. We investigated the functional roles of the two domains of phosducin and phosducin-like protein in binding retinal Gtbetagamma. Kinetic measurements using surface plasmon resonance showed that: 1) phosducin bound Gtbetagamma with a 2.5-fold greater affinity than phosducin-like protein; 2) phosphorylation of phosducin decreased its affinity by 3-fold, principally as a result of a decrease in k1; and 3) most of the free energy of binding comes from the N-terminal domain with a lesser contribution from the C-terminal domain. In assays measuring the association of Gtbetagamma with Gtalpha and light-activated rhodopsin, both N-terminal domains inhibited binding while neither of the C-terminal domains had any effect. In assays measuring membrane binding of Gtbetagamma, both the N- and C-terminal domains inhibited membrane association, but much less effectively than the full-length proteins. This inhibition could only be described by models that included a change in Gtbetagamma to a conformation that did not bind the membrane. These models yielded a free energy change of +1.5 +- 0.25 kcal/mol for the transition from the Gtalpha-binding to the Pd-binding conformation of Gtbetagamma.

L4 ANSWER 30 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:194575 CAPLUS
DOCUMENT NUMBER: 133:173594
TITLE: Molecular Cloning and **Characterization** of Xenopus RGS5
AUTHOR(S): Saitoh, Osamu; Odagiri, Megumi; Masuho, Ikuo; Nomoto, Satoshi; Kinoshita, Noriyuki
CORPORATE SOURCE: Department of Molecular and Cellular Neurobiology, Tokyo Metropolitan Institute for Neuroscience, Fuchu-shi, Tokyo, 183-8526, Japan
SOURCE: Biochemical and Biophysical Research Communications (2000), 270(1), 34-39
CODEN: BBRCA9; ISSN: 0006-291X
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We identified six genes that encode putative **RGS** proteins (XRGSI-VI) in developing Xenopus embryos using PCR amplification with degenerate primers corresponding to the conserved region (**RGS** domain) of known **RGS** proteins. RT-PCR anal. revealed that mRNAs of these XRGSs are differentially expressed during embryogenesis. At

stage 1, only XRGSII mRNA was detected. On the other hand, expression of XRGSVI mRNA increased apparently at stage 14 and expression of three of other XRGS (III, IV, V) elevated between stage 25 and 40. To further **characterize** XRGS proteins expressed in Xenopus embryos, we **isolated** a cDNA clone for XRGSIII. Based on detd. nucleotide sequence, XRGSIII was considered as a Xenopus homolog of mammalian RGS5 (XRGS5). Genetic anal. using the pheromone response halo assay showed that expression of XRGS5 inhibits yeast response to .alpha.-factor, suggesting that XRGS5 neg. **regulates** the **G-protein**-mediated signaling pathway in developing Xenopus embryos.
(c) 2000 Academic Press.
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 31 OF 39 USPATFULL on STN
ACCESSION NUMBER: 1999:113602 USPATFULL
TITLE: **Regulator** of cell signaling
INVENTOR(S): Hillman, Jennifer L., San Jose, CA, United States
Goli, Surya K., Sunnyvale, CA, United States
PATENT ASSIGNEE(S): Incyte Pharmaceuticals, Inc., Palo Alto, CA, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5955314		19990921	
APPLICATION INFO.:	US 1996-748483		19961108	(8)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Feisee, Lila
ASSISTANT EXAMINER: Sun-Hoffman, Lin
LEGAL REPRESENTATIVE: Billings, Lucy J.Incyte Pharmaceuticals, Inc.
NUMBER OF CLAIMS: 8
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 6 Drawing Figure(s); 6 Drawing Page(s)
LINE COUNT: 1967
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a human **regulator** of **G-protein** signaling (HRGS) and polynucleotides which identify and encode HRGS. The invention also provides genetically engineered expression vectors and host cells comprising the nucleic acid sequences encoding HRGS and a method for producing HRGS. The invention also provides for agonists, antibodies, or antagonists specifically binding HRGS, and their use, in the prevention and treatment of diseases associated with expression of HRGS. Additionally, the invention provides for the use of antisense molecules to polynucleotides encoding HRGS for the treatment of diseases associated with the expression of HRGS. The invention also provides diagnostic assays which utilize the polynucleotide, or fragments or the complement thereof, and antibodies specifically binding HRGS.

L4 ANSWER 32 OF 39 USPATFULL on STN
ACCESSION NUMBER: 1999:85558 USPATFULL
TITLE: **Regulators** of **G-protein** signalling
INVENTOR(S): Horvitz, H. Robert, Auburndale, MA, United States
Koelle, Michael, Somerville, MA, United States
PATENT ASSIGNEE(S): Massachusetts Institute of Technology, Cambridge, MA, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5929207		19990727	
APPLICATION INFO.:	US 1996-588258		19960112	(8)

DOCUMENT TYPE: Utility

FILE SEGMENT: Granted
PRIMARY EXAMINER: Sisson, Bradley L.
LEGAL REPRESENTATIVE: Clark & Elbing LLP
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 19 Drawing Figure(s); 13 Drawing Page(s)
LINE COUNT: 2082
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Disclosed is substantially pure DNA encoding a C. elegans EGL-10 polypeptide; substantially pure EGL-10 polypeptide; methods of obtaining **rgs** encoding DNA and **RGS** polypeptides; and methods of using the **rgs** DNA and **RGS** polypeptides to **regulate G-protein signalling**.

L4 ANSWER 33 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:42599 CAPLUS
DOCUMENT NUMBER: 132:162599
TITLE: Palmitoylation of a conserved cysteine in the **regulator** of **G protein** signaling (**RGS**) domain modulates the GTPase-activating activity of RGS4 and RGS10
AUTHOR(S): Tu, Yaping; Popov, Sergei; Slaughter, Clive; Ross, Elliott M.
CORPORATE SOURCE: The Departments of Pharmacology, University of Texas Southwestern Medical Center, Dallas, TX, 75390-9041, USA
SOURCE: Journal of Biological Chemistry (1999), 274(53), 38260-38267
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB RGS4 and RGS10 expressed in Sf9 cells are palmitoylated at a conserved Cys residue (Cys95 in RGS4, Cys66 in RGS10) in the **regulator** of **G protein** signaling (**RGS**) domain that is also autopalmitoylated when the **purified** proteins are incubated with palmitoyl-CoA. RGS4 also autopalmitoylates at a previously identified cellular palmitoylation site, either Cys2 or Cys12. The C2A/C12A mutation essentially eliminates both autopalmitoylation and cellular [3H]palmitate labeling of Cys95. Membrane-bound RGS4 is palmitoylated both at Cys95 and Cys2/12, but cytosolic RGS4 is not palmitoylated. RGS4 and RGS10 are GTPase-activating proteins (GAPs) for the Gi and Gq families of **G proteins**. Palmitoylation of Cys95 on RGS4 or Cys66 on RGS10 inhibits GAP activity 80-100% toward either G.alpha.i or G.alpha.z in a single-turnover, soln.-based assay. In contrast, when GAP activity was assayed as acceleration of steady-state GTPase in receptor-**G protein** proteoliposomes, palmitoylation of RGS10 potentiated GAP activity .gtoreq.20-fold. Palmitoylation near the N terminus of C95V RGS4 did not alter GAP activity toward sol. G.alpha.z and increased Gz GAP activity about 2-fold in the vesicle-based assay. Dual palmitoylation of wild-type RGS4 remained inhibitory. **RGS** protein palmitoylation is thus multi-site, complex in its control, and either inhibitory or stimulatory depending on the **RGS** protein and its sites of palmitoylation.
REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 34 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:241721 CAPLUS
DOCUMENT NUMBER: 131:41217
TITLE: RGS7 and RGS8 differentially accelerate **G protein**-mediated modulation of K+ currents
AUTHOR(S): Saitoh, Osamu; Kubo, Yoshihiro; Odagiri, Megumi;

Ichikawa, Masumi; Yamagata, Kanato; Sekine, Toshiaki
CORPORATE SOURCE: Department of Molecular and Cellular Neurobiology, Tokyo Metropolitan Institute for Neuroscience, Fuchu, 183-8526, Japan
SOURCE: Journal of Biological Chemistry (1999), 274(14), 9899-9904
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The recently discovered family of **RGS** (**regulators** of **G protein** signaling) proteins acts as GTPase activating proteins which bind to .alpha. subunits of heterotrimeric **G proteins**. We previously showed that a brain-specific **RGS**, RGS8 speeds up the activation and deactivation kinetics of the **G protein**-coupled inward rectifier K+ channel (GIRK) upon receptor stimulation (Saitoh, O., Kubo, Y., Miyatani, Y., Asano, T., and Nakata, H. (1997) Nature 390, 525-529). Here we report the **isolation** of a full-length rat cDNA of another brain-specific **RGS**, RGS7. In situ hybridization study revealed that RGS7 mRNA is predominantly expressed in Golgi cells within granule cell layer of cerebellar cortex. We obsd. that RGS7 recombinant protein binds preferentially to G.alpha.o, G.alpha.i3, and G.alpha.z. When co-expressed with GIRK1/2 in Xenopus oocytes, RGS7 and RGS8 differentially accelerate **G protein**-mediated modulation of GIRK. RGS7 clearly accelerated activation of GIRK current similarly with RGS8 but the acceleration effect of deactivation was significantly weaker than that of RGS8. These acceleration properties of **RGS** proteins may play important roles in the rapid **regulation** of neuronal excitability and the cellular responses to short-lived stimulations.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 35 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:180991 CAPLUS
DOCUMENT NUMBER: 130:322106
TITLE: G.beta.5 prevents the RGS7-G.alpha.o interaction through binding to a distinct G.gamma.-like domain found in RGS7 and other **RGS** proteins
AUTHOR(S): Levay, Konstantin; Cabrera, Jorge L.; Satpaev, Daulet K.; Slepak, Vladlen Z.
CORPORATE SOURCE: Department of Molecular and Cellular Pharmacology and Neuroscience Program, University of Miami School of Medicine, Miami, FL, 33136, USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (1999), 96(5), 2503-2507
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The **G protein** .beta. subunit G.beta.5 deviates significantly from the other four members of G.beta.-subunit family in amino acid sequence and subcellular localization. To detect the protein targets of G.beta.5 in vivo, the authors have **isolated** a native G.beta.5 protein complex from the retinal cytosolic fraction and identified the protein tightly assocd. with G.beta.5 as the **regulator** of **G protein** signaling (**RGS**) protein, RGS7. Complexes of G.beta.5 with **RGS** proteins can be formed in vitro from the recombinant proteins. The reconstituted G.beta.5-**RGS** dimers are similar to the native retinal complex in their behavior on gel-filtration and cation-exchange chromatogs. and can be immunopptd. with either anti-G.beta.5 or anti-RGS7 antibodies. The specific G.beta.5-RGS7 interaction is detd. by a distinct domain in

RGS that has a striking homol. to G.gamma. subunits. Deletion of this domain prevents the RGS7-G.beta.5 binding, although the interaction with G.alpha. is retained. Substitution of the G.gamma.-like domain of RGS7 with a portion of G.gamma.1 changes its binding specificity from G.beta.5 to G.beta.1. The interaction of G.beta.5 with RGS7 blocked the binding of RGS7 to the G.alpha. subunit G.alpha.o, indicating that G.beta.5 is a specific **RGS** inhibitor.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 36 OF 39 MEDLINE on STN DUPLICATE 5

ACCESSION NUMBER: 1999453725 MEDLINE
DOCUMENT NUMBER: 99453725 PubMed ID: 10524200
TITLE: Human phosducin-like protein (hPhLP) messenger RNA stability is **regulated** by cis-acting instability elements present in the 3'-untranslated region.
AUTHOR: Lazarov M E; Martin M M; Willardson B M; Elton T S
CORPORATE SOURCE: Department of Chemistry and Biochemistry, Brigham Young University, Provo, UT 84602, USA.
CONTRACT NUMBER: HL48848 (NHLBI)
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA, (1999 Sep 3) 1446 (3) 253-64.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199911
ENTRY DATE: Entered STN: 20000111
Last Updated on STN: 20000111
Entered Medline: 19991104

AB Phosducin (Pd) and phosducin-like protein (PhLP) have been shown to **regulate G-protein signaling** by binding G beta gamma subunits. To better define the function and **regulation** of PhLP, and to begin to investigate its potential role in human pathophysiological states, we have cloned the human PhLP (hPhLP) cDNA. The hPhLP shows 92% identity with the rat PhLP (rPhLP). However, unlike the rPhLP, no evidence of hPhLP isoforms were detected in the human tissues investigated. Additionally, unlike the rPhLP, alternative polyadenylation sites were detected in hPhLP cDNA clones which corresponded with two distinct mRNA transcripts, 1.2 kb and 3.1 kb, respectively. Interestingly, the predominantly expressed long transcript contains multiple AU-rich elements (AREs) in its 3'-untranslated region (3'-UTR) which have been shown to correlate with rapid mRNA turnover and translational control. This study shows that the hPhLP AREs are functional both in vitro and in vivo, with the long transcript exhibiting a much shorter mRNA half-life. We also demonstrate that subcloning of either the full-length 3'-UTR or the ARE-rich region of the long transcript immediately following the stop codon of luciferase reporter gene confers instability to the luciferase mRNA and results in a ninefold reduction of luciferase activity in the cell types investigated. Taken together, these findings suggest that the AREs present in the long hPhLP mRNA may play a critical role in the **regulation** of hPhLP gene expression.

L4 ANSWER 37 OF 39 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 1998-286944 [25] WPIDS
DOC. NO. NON-CPI: N1998-225465
DOC. NO. CPI: C1998-088975
TITLE: **Regulator** of **G-protein** signalling - used to develop products for treating e.g. cancer, inflammation, hypertension, cardiovascular shock, arrhythmias or asthma.
DERWENT CLASS: B04 D16 S03

INVENTOR(S): GOLI, S K; HILLMAN, J L; GOLI, S
PATENT ASSIGNEE(S): (INCY-N) INCYTE PHARM INC; (GOLI-I) GOLI S; (HILL-I) HILLMAN J L
COUNTRY COUNT: 40
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9820128	A1	19980514	(199825)*	EN	66
RW: AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW					
W: AT AU BR CA CH CN DE DK ES FI GB IL JP KR MX NO NZ RU SE SG US					
AU 9852383	A	19980529	(199841)		
US 5955314	A	19990921	(199945)		
EP 958363	A1	19991124	(199954)	EN	
R: BE DE ES FR GB IT NL					
JP 2001527522	W	20011225	(200204)		71
US 2002034777	A1	20020321	(200224)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9820128	A1	WO 1997-US18476	19971106
AU 9852383	A	AU 1998-52383	19971106
US 5955314	A	US 1996-748483	19961108
EP 958363	A1	EP 1997-947261	19971106
		WO 1997-US18476	19971106
JP 2001527522	W	WO 1997-US18476	19971106
		JP 1998-521408	19971106
US 2002034777	A1 Div ex	US 1996-748483	19961108
		US 1998-206639	19981207

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9852383	A	Based on	WO 9820128
EP 958363	A1	Based on	WO 9820128
JP 2001527522	W	Based on	WO 9820128
US 2002034777	A1	Div ex	US 5955314

PRIORITY APPLN. INFO: US 1996-748483 19961108; US 1998-206639 19981207

AB WO 9820128 A UPAB: 19980624

Regulator of **G-protein** signalling (HRGS)

comprises an amino acid sequence (I) or its fragments:

Met Cys Lys Gly Leu Ala Ala Leu Pro His Ser Cys Leu Glu Arg Ala Lys Glu Ile Lys Ile Lys Leu Gly Ile Leu Leu Gln Lys Pro Asp Ser Val Gly Asp Leu Val Ile Pro Tyr Asn Glu Lys Pro Glu Lys Pro Ala Lys Thr Gln Lys Thr Ser Leu Asp Glu Ala Leu Gln Trp Arg Asp Ser Leu Asp Lys Ser Glu Phe Ser Glu Glu Asn Leu Glu Phe Trp Ile Ala Cys Glu Asp Tyr Lys Lys Ile Lys Ser Pro Ala Lys Met Ala Glu Lys Ala Lys Gln Ile Tyr Glu Glu Phe Ile Gln Thr Glu Ala Pro Lys Glu Val Asn Ile Asp His Phe Thr Lys Asp Ile Thr Met Lys Arg Ile His Ala Leu Met Glu Lys Asp Ser Leu Pro Arg Val Arg Ser Glu Phe Tyr Gln Glu Leu Ile Lys, (I).

Also claimed are:

(1) a **purified** polynucleotide sequence (PNS) encoding a HRGS as above;

(2) a PNS which hybridises under stringent conditions to a PNS as in (1);

(3) a hybridisation probe comprising a PNS as in (1);

(4) a PNS which is complementary to the PNS or its variants;

(5) a hybridisation probe comprising a PNS as in (4);

(6) an expression vector containing a PNS as in (1);
(7) a host cell containing a vector as in (6);
(8) a **purified** antibody which binds specifically to (and optionally modulates) a polypeptide as above, and
(9) a **purified** antagonist which specifically binds to and modulated the activity of a polypeptide as above.
USE - The HRGS **regulates G-protein signalling** in cancer cells and may be useful in the treatment of any cancer, especially cancers of the brain and thyroid. The products can also be used for treating other conditions associated with uncontrolled cell signalling such as inflammation. The products can also be used to modulate HRGS activity in response to disorders involving the sympathetic nervous system including hypertension, cardiovascular shock, arrhythmias and asthma. The products can also be used for detection, diagnosis and drug screening.

L4 ANSWER 38 OF 39 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1997-034298 [03] WPIDS
DOC. NO. NON-CPI: N1997-028879
DOC. NO. CPI: C1997-010724
TITLE: New **isolated regulator** of **G -protein** signalling genes - used to develop prods. for the diagnosis and treatment of **G-protein** related diseases and disorders e.g. diabetes, cardiovascular disease, etc.
DERWENT CLASS: B04 D16 S03
INVENTOR(S): HORVITZ, H R; KOELLE, M
PATENT ASSIGNEE(S): (MASI) MASSACHUSETTS INST TECHNOLOGY
COUNTRY COUNT: 20
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9638462	A1	19961205	(199703)*	EN	96
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
W: CA JP					
US 5929207	A	19990727	(199936)		
US 6069296	A	20000530	(200033)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9638462	A1	WO 1996-US8295	19960531
US 5929207	A	US 1996-588258	19960112
US 6069296	A	US 1995-460505	19950602

PRIORITY APPLN. INFO: US 1996-588258 19960112; US 1995-460505 19950602
AB WO 9638462 A UPAB: 19970115
A pure nucleic acid (I) encoding an **RGS** (**regulator** of **G-protein** signalling) polypeptide is new.
USE - The prods. can be used to **regulate G-protein signalling** and to screen for cpds. which **regulate G-protein signalling**.
RGS polypeptides which increase secretion can be used to increase the secretion of commercially useful polypeptides into culture media. The prods. can also be used in the diagnosis and treatment of **G-protein** related disorders such as diabetes, hyperplasia, psychiatric disorders, cardiovascular disease, McCune-Albright Syndrome or Albright hereditary osteopathy.
Dwg.0/7

L4 ANSWER 39 OF 39 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 1997:210398 CAPLUS
DOCUMENT NUMBER: 126:262001
TITLE: A **regulator** of **G-protein** signaling in olfactory receptor neurons
AUTHOR(S): Bruch, Richard C.; Medler, Kathryn F.
CORPORATE SOURCE: Department of Zoology and Physiology, Louisiana State University, Baton Rouge, LA, 70803, USA
SOURCE: NeuroReport (1996), 7(18), 2941-2944
CODEN: NERPEZ; ISSN: 0959-4965
PUBLISHER: Rapid Science Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Degenerate primers were used in the polymerase chain reaction (PCR) to investigate the expression of genes encoding **regulators** of **G-protein** signaling (**RGS**) in olfactory rosettes and in **isolated** olfactory receptor neurons from channel catfish. Five cloned PCR products were obtained from olfactory rosettes that shared 78% amino acid sequence similarity to the mammalian RGS3 gene product. Southern blotting of PCR products from **isolated** olfactory receptor neurons showed that the catfish RGS3 homolog was expressed in the neurons. Apparently, the RGS3 gene may be involved in **regulating G-protein signaling** in olfactory receptor neurons. These results are also the first demonstration of **RGS** gene expression in a vertebrate sensory system.

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RGS10 is a selective activator of G alpha i GTPase activity.

Hunt TW, Fields TA, Casey PJ, Peralta EG.

Department of Molecular and Cellular Biology, Harvard University, Cambridge, Massachusetts 02138, USA.

Polypeptides that define a protein family termed RGS (for regulators of G-protein signalling) are encoded by the SST2 gene of the yeast Saccharomyces cerevisiae, the EGL-10 gene of the nematode Caenorhabdatis elegans, and several related mammalian genes. Genetic studies in invertebrates and mammalian cell-transfection experiments indicate that RGS proteins negatively regulate signalling pathways involving seven transmembrane receptors and heterotrimeric G proteins. However, the biochemical mechanism by which RGS proteins control these pathways is unknown. Here we report the characterization of human RGS10, a member of this protein family. Co-immunoprecipitation studies demonstrate that RGS10 associates specifically with the activated forms of two related G-protein subunits, G alphai3, and G alphaz, but fails to interact with the structurally and functionally distinct G alphas subunit. In vitro assays with purified proteins indicate that RGS10 increases potently and selectively the GTP hydrolytic activity of several members of the G alphai family, including G alphai3, G alphaz, and G alpha0. These results demonstrate that RGS proteins can attenuate signalling pathways involving heterotrimeric G proteins by serving as GTPase-activating proteins for specific types of G alpha subunits.

PMID: 8774883 [PubMed - indexed for MEDLINE]

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Regulators of G-protein signalling: a novel protein family involved in timely deactivation and desensitization of signalling via heterotrimeric G proteins.

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In a variety of signalling pathways heterotrimeric guanine-nucleotide-binding proteins (G proteins) trigger physiological responses elicited by hormones, neurotransmitters and sensory stimuli. Receptor-induced GDP/GTP exchange activates G proteins by dissociating G-protein alpha-subunits from the betagamma-dimers. Both alpha-subunits and betagamma-dimers are involved in effector regulation. The deactivation of these active forms is controlled by the hydrolysis of GTP bound to alpha-subunits, allowing the inactive heterotrimer to reform. Termination of G-protein-mediated signalling in vivo is 10- to 100-fold faster than the in vitro rate of GTP hydrolysis by alpha-subunits, suggesting that in analogy to the GTPases of the Ras-superfamily, GTPase-activating proteins (GAPs) are required to achieve timely deactivation. Recently, members of a novel protein superfamily, known as "regulators of G-protein signalling" (RGS), were identified as potent GAPs for at least one subset of heterotrimeric G-protein alpha-subunits. In this review, we intend to discuss the proposed mechanism by which RGS proteins exert GAP activity for G-protein alpha-subunits as well as their specificities. The role of RGS proteins in desensitization and temporal resolution in certain signalling pathways will also be addressed.

Publication Types:
- Review
- Review, Tutorial

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A novel regulator of G protein signalling in yeast, Rgs2, downregulates glucose-activation of the cAMP pathway through direct inhibition of Gpa2.

Versele M, de Winde JH, Thevelein JM.

Laboratorium voor Moleculaire Celbiologie, Instituut voor Plantkunde en Microbiologie, Katholieke Universiteit Leuven, Kardinaal Mercierlaan 92, B-3001 Leuven-Heverlee, Flanders, Belgium.

We have characterized a novel member of the recently identified family of regulators of heterotrimeric G protein signalling (RGS) in the yeast Saccharomyces cerevisiae. The YOR107w/RGS2 gene was isolated as a multi-copy suppressor of glucose-induced loss of heat resistance in stationary phase cells. The N-terminal half of the Rgs2 protein consists of a typical RGS domain. Deletion and overexpression of Rgs2, respectively, enhances and reduces glucose-induced accumulation of cAMP. Overexpression of RGS2 generates phenotypes consistent with low activity of cAMP-dependent protein kinase A (PKA), such as enhanced accumulation of trehalose and glycogen, enhanced heat resistance and elevated expression of STRE-controlled genes. Deletion of RGS2 causes opposite phenotypes. We demonstrate that Rgs2 functions as a negative regulator of glucose-induced cAMP signalling through direct GTPase activation of the Gs-alpha protein Gpa2. Rgs2 and Gpa2 constitute the second cognate RGS-G-alpha protein pair identified in yeast, in addition to the mating pheromone pathway regulators Sst2 and Gpa1. Moreover, Rgs2 and Sst2 exert specific, non-overlapping functions, and deletion mutants in Rgs2 and Sst2 are complemented to some extent by different mammalian RGS proteins.

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[Guanidine nucleotide binding proteins as membrane signal transduction components and regulators of enzymatic effectors]

[Article in German]

Rosenthal W, Schultz G.

Institut fur Pharmakologie, Freie Universitat Berlin.

The vast majority of extracellular signals alters cell function by activating cell surface receptors. The transmembranous signalling process initiated by an activated receptor leads to the generation of an intracellular signal and eventually to a cellular response. In contrast to receptors that are permanently coupled to an enzyme or an ion channel representing the effector, a large number of surface receptors for hormones, neurotransmitters and receptors for exogenous chemical or physical stimuli reversibly interacts with membranous signal transduction components which, in turn, regulate intracellular messenger-generating effectors. The transducer molecules isolated so far form a family of guanine nucleotide-binding proteins (G- or N-proteins). All isolated G-proteins are composed of three different subunits (alpha, beta, gamma). The alpha-subunit, which is specific for the individual G-protein, binds and hydrolyzes GTP and is target of ADP-ribosylating bacterial toxins. Hormone-induced activation of a receptor causes interaction with the alpha-subunit of a G-protein and the exchange of bound GDP with GTP. The GTP-bound form of the alpha-subunit represents the active form of the G-protein, which is capable of stimulating or inhibiting the respective effector. The active state of the alpha-subunit is terminated by its inherent GTPase activity causing hydrolysis of bound GTP. The beta gamma-complexes of G-proteins are structurally very similar and functionally interchangeable; they appear to dissociate from the alpha-subunits during receptor activation of the G-protein. Possible functions of the beta gamma-complex are to anchor the non-activated G-protein in the membrane, to facilitate G-protein-receptor interaction, and to promote the inactive state of the alpha-subunit. G-protein-regulated effectors include enzymes, ion channels and probably transporters. The best studied G-protein-regulated enzyme is the retinal cyclic GMP-phosphodiesterase which is activated by bleached rhodopsin via the tissue-specific G-protein, termed transducin. The ubiquitously occurring membrane-bound adenylate cyclase is under dual control by families of stimulatory and inhibitory receptors, acting via G-proteins called Gs and Gi,

respectively. Moreover, the receptor control of phospholipases A2 and C and probably of phospholipase D most likely involves G-proteins which have not yet been identified. Finally, the activity of NADPH oxidase of neutrophils and that of cyclic AMP phosphodiesterases in liver and fat cells may be regulated via G-proteins. Modulations of non-enzymatic effectors are reviewed elsewhere.

Publication Types:
- Review
- Review, Tutorial

PMID: 2843711 [PubMed - indexed for MEDLINE]